The Main Menu

Newsletter for AppleWorks Users

Volume 2 Number 8 August 1987

Part 1

AppleWorks Annuities

by John B. Slack

If you're looking for a serious investment plan, consider the annuity. As the basis of many pension plans and retirement programs, annuities have a proven track record.

Let's look at annuities more closely. First, we can divide annuity calculations into three phases: accumulation, holding, and payout. During the accumulation phase, the investor makes over a period of time one or more deposits, on which he or she receives interest. In the holding phase, deposits have stopped, but the money accumulated collects interest until the time for payout arrives. During payout, the investor receives money from the account at a regular rate until the entire principal and interest are gone.

As an investor planning an annuity program, you can employ either of two broad strategies. You may simply deposit what you can afford during the accumulation phase and take what you get during payout. The alternative is to plan what you want to receive in the payout phase and calculate the deposits you'll have to make to arrive at the desired amount.

The AppleWorks spreadsheet template presented here in Part 1 addresses the first choice. You'll enter what you can afford

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Heard Here First

by Deborah de Peyster

It isn't perfectly clear: The name of Apple's new software company is **Claris Corporation**. While the name may suggest clarity, there's little else that's clear about the company's aims. We still don't know for sure whether AppleWorks will be one of the new company's products.

We understand that Robert Lissner, developer of AppleWorks, is concerned about the support AppleWorks will get if it goes with Claris. He's written Apple to express those concerns. He wants to make sure the product receives technical support and is updated to meet user needs, sources say.

We feel Lissner's concerns are justified. The president of Claris, Bill Campbell, has never been much of an Apple II groupie, and his vice president, John Zeisler, has always been a Macintosh fan. Both have leaned toward the excitement and appeal of business-market software. Apple II software—productivity, education, and entertainment—has never caught their eye.

The likely champions for AppleWorks in the new company would be its product managers and technical-

support people. As of this writing, only a few of those people had decided to join Claris, not necessarily to work with the AppleWorks product. Full details of personnel changes won't be available until after September 25, which, according to sources at Apple, is the deadline for moving to Claris.

It also appears that the 16-bit-AppleWorks project is officially dead. We've heard Campbell has discussed the prospect of adapting Microsoft's Macintosh-based **The Works** to the GS with the program's developer, Don Williams. As Williams worked with Lissner in developing the orignal AppleWorks (much of AppleWorks was incorporated into The Works), he would certainly be the person to help get such a project off the ground.

It seems, however, that Campbell and Williams have concluded that moving The Works to Apple is just not worth the effort. So unless Claris can find a new developer to come up with a 16-bit AppleWorks, it looks like that project is out of the picture.

New ImageWriter: We understand Apple is working on a new printer called the ImageWriter LQ. Estimated to cost $1200–$1500, it will be introduced at MacWorld Expo this month. Although no details were available at press time, we expect the LQ to offer even better print quality than the ImageWriter II.

AppleWorks desktop publishing: We just received a copy of **Printrix 1.0** from Data Transforms and a brief look at the product has us excited. The program combines AppleWorks word-processing files with Print Shop, Newsroom, or FontWorks graphics to make multicolumn page layouts.

Printrix also offers a variety of fonts and font enhancements such as italics, boldface, underlining, and magnification. Data Transforms also claims to have included a special high-quality print technique to double the vertical resolution of dot-matrix print on models such as Apple's ImageWriter. We'll evaluate this program in next month's *Main Menu* and let you know whether it lives up to its advance billing. Data Transforms, developer of the font and graphics program Fontrix, is offering Printrix at $65. ■

The Main Menu ►►►►►►►►►►►►►►►►►►►►

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Answers

by Kelly Stirn

If you'd like Kelly to answer your AppleWorks questions, write him at The Main Menu, *Elm Street, Peterborough, NH 03458. We'll print the answers to as many questions as we can.*

? Missing Memory

Q I have an Apple IIe with a regular Apple 80-column card in the auxiliary slot (no extended memory). I recently purchased an Apple Memory Expansion card and plugged it into one of the seven peripheral slots, but I still get only 10K of desktop memory. Is there any patch that can give me the extra desktop memory I expect?

Bob Greenawalt
Rosemead, CA

A *No patch required. AppleWorks takes advantage of your Apple Memory Expansion card whether you have a plain or an extended 80-column card.*

You may not be getting the extra desktop memory because you placed the Memory Expansion card into slot 3, which is mapped to the same location as the auxiliary slot. If so, AppleWorks can't see the card because it first sees your 80-column card in the auxiliary slot and therefore ignores slot 3. Install your Memory Expansion card in a higher slot, and you should see an increase in your AppleWorks desktop.

? Page-Number Problems

Q I have difficulty numbering pages with the AppleWorks word processor. Through trial and error, I can number the first page correctly. Yet, unless I repeat the entire process for each succeeding page, AppleWorks won't print page numbers on the rest of the document. What am I doing wrong?

Jeanette Burch
Cannon Falls, MN

A *Place a footer command at the beginning of your document: Press Open apple-O (OA-O) for options, then type FO for* page footer. *Type* Page *on the line directly below the command* -----Page Footer *and place the cursor immediately after the word.*

Press OA-P and type PP, for print page number. *When the caret appears, place the cursor on top of it.* Print Page No *then appears at the bottom of the screen. When you print your document, AppleWorks will automatically print the proper page number at the bottom of every sheet.*

Don't mistake the PN, or page number, *command for PP,* print page number. *PN sets the beginning page number when AppleWorks sees a PP command.*

If you any further difficulty, consult the AppleWorks 2.0 user's manual, pages 83, 85, and 246, or earlier AppleWorks manuals, beginning at page 171.

? No Justification

Q Because AppleWorks doesn't have a microjustification feature, I have difficulty justifying material with my Epson DX-10 daisywheel printer. Indented first lines are pulled to the right, leaving a ragged left-indented line. This is particularly frustrating, for example, in a proposal in which the headings are bold and the succeeding level indented another five spaces. Is there a way to justify documents so that all indentations line up correctly?

Beverly Sykes
Davis, CA

A *I suspect that what you're doing to indent each line differently is either tabbing or inserting spaces to start each heading in the correct column. This may cause problems in AppleWorks, especially when working with proportional or justified text.*

The proper way to indent entire paragraphs or single lines is to use the left-margin command (LM). This will ensure that your paragraphs and lines are lined up correctly when printed.

When AppleWorks justifies a paragraph, it places extra space between words, where space already exists. In your case, AppleWorks places extra space in the blank spots preceding your headings.

Also, AppleWorks does *have microjustification, but it's limited to certain printers among those AppleWorks supports. Microjustification places fractional spaces of different sizes between words (rather than full spaces) to give your printed paragraph a more professional look.*

To support microjustification, the software must send codes to the printhead to move it incrementally. Only some of the printer drivers built into AppleWorks support this feature; these printers also support true proportional spacing.

? Reading from Memory

Q I just bought an Apple memory-expansion card for my GS. When I boot up AppleWorks, I get the message "Preloading AppleWorks program into memory-expansion card." I haven't noticed any difference in the program's operation, other than adding ten seconds to the bootup time. Just what does it do?

Preston Q. Boomer
Santa Cruz, CA

A *When you start AppleWorks, it loads sections of the program, such as the text-editing and memory-management portions, into your computer's main RAM (on the motherboard) so that they're always available. Other sections, such as help menus, remain on disk. (You'll see your AppleWorks Program disk spin as you perform certain AppleWorks operations.)*

Another example is the switch from the word processor to the spreadsheet. Because there's not enough room in RAM for both, AppleWorks replaces portions of the word processor with the spreadsheet as it reads the latter from disk.

When you run AppleWorks with an Apple Memory Expansion board, however, there's a difference. The entire program, not just portions of it, loads into memory. Now when you want to move from the word processor to the spreadsheet, the program makes the switch immediately. AppleWorks still replaces the word processor with the spreadsheet, but because it reads that module from memory, not disk, it's much faster.

Unlike other brands of AppleWorks memory-enhancement software, Apple's lets the AppleWorks program share the memory with the desktop. The desktop has priority, however. If

your desktop grows so large it runs into program space, the desktop replaces part of the program. AppleWorks will read that section of the program from disk if needed, therby slowing down the process again.

The advantage of this technique is that you not only load all of AppleWorks into memory, but you have the potential for a large desktop. Other brands of memory-expansion software don't give you this flexibility.

The only portion of AppleWorks not read into memory is the file containing printer-configuration information. Apple felt that many users would change their configurations, then turn off their computers without realizing that such information wouldn't be saved to disk.

? From 1 to Z

Q I'm using an AppleWorks spreadsheet for gradekeeping. My @LOOKUP table table looks like this:

.1	49.5	64.5	79.5	94.5
0	1	2	3	4

Is there any way to display or print letter grades instead of numerical scores?

Wayne P. Armstrong
San Marcos, CA

A *Sorry—@LOOKUP tables in AppleWorks return only numerical, not alphanumerical, data. To get around this, transfer your spreadsheet to the word processor, then simply replace, say, all 4s with As.*

? Printer-Code Control

Q I have a problem using AppleWorks with my Silver Reed daisywheel printer. I can't use any character-per-inch setting except the printer's default value of 10 cpi. AppleWorks doesn't seem to pass the four-character printer codes properly.

Douglas W. Parrott
Bay City, MI

A *Thanks for sending the sample printouts of your problem, plus hardcopy of AppleWorks' screens.*

When printer manuals describe the codes that make various features work, they include a number of abbreviations. For example, your manual lists the codes for 12 cpi as ESC US VT. Don't place US and VT into your definition, though. US is actually an abbreviation for the "upshift" character (or Control-Underline); VT stands for "vertical tab" (or Control-K).

Table. *Printer-code abbreviations (left), followed by their control-code equivalents (middle) and corresponding hex codes (right).*

NULL	Control-@	ØØ
SOH	Control-A	Ø1
STX	Control-B	Ø2
ETX	Control-C	Ø3
ET	Control-D	Ø4
ENQ	Control-E	Ø5
ACK	Control-F	Ø6
BEL	Control-G	Ø7
BS	Control-H	Ø8
HT	Control-I	Ø9
LF	Control-J	ØA
VT	Control-K	ØB
FF	Control-L	ØC
CR	RETURN	ØD
SO	Control-N	ØE
SI	Control-O	ØF
DLE	Control-P	1Ø
DC1	Control-Q	11
DC2	Control-R	12
DC3	Control-S	13
DC4	Control-T	14
NAK	Control-U	15
SYN	Control-V	16
ETB	Control-W	17
CAN	Control-X	18
EM	Control-Y	19
SUB	Control-Z	1A
ESC	Escape	1B
FS	Control-\	1C
GS	Control-]	1D
RS	Control-^	1E
US	Control-_	1F

The codes you should enter here are Escape Control-_ Control-K. Don't type the word Control, *nor any hyphens or spaces: Just press the control key at the same time you hit the character. See the* ***Table*** *for a list of other abbreviations, with their control-code and hexadecimal equivalents.*

One final point to remember when reading printer manuals: Even if a space appears to exist between codes, don't press the spacebar. I have yet to see any printer codes requiring space characters.

? The 20N Bug

Q I bought a Brother HR-20 printer, which I was told would be compatible with AppleWorks 1.2. After I create a custom printer, most of each document prints, but at the top corner of the first page, "20N" (including the quotes) appears. What causes this?

Richard A. Houghton, M.D.

A *Thanks for sending a complete description of the codes for your Brother printer and the AppleWorks printout illustrating your problem. Since "20N" appears only at the top of the first page, it's your printer-interface-card setting. The quotation marks in your code may be causing your problem.*

You didn't mention which model Apple and interface card you have, so I'm assuming Control-I20N is the correct code for the interface-card setting. When entering the characters, remember to press the Control and I keys at the same time to place them on screen. Then type 2, a zero, and capital N. If you see strange results, try changing 20 to a zero or 255.

? Qume Codes

Q I have a Qume Letter Pro 20S printer. I'm having problems getting AppleWorks to take advantage of its features. Underlining occurs only in the spaces between characters; boldface works if I select Qume Sprint 11 from the list of printers in AppleWorks, but F66 appears at the top of each page; and when I call my printer Qume Sprint 5, I get perfect copies, but none of the printer options works. I've tried creating a custom printer, but with no success.

Charlotte B. Puck
Cottonwood, CA

A *First of all, your Qume LetterPro 20 is incompatible with the Qume Sprint 5 and 11—that's why you're getting the strange F66 characters when you select the Sprint 11 and no printer features with Sprint 5.*

You'll have to create a custom printer. But this is where the fun begins—I've never seen an unfriendlier printer manual. Here are the codes you should use for underlining, characters per inch, lines per inch, subscripts, and superscipts (don't enter any spaces):

underline begin = Escape I
underline end = Escape J
boldface begin = Escape K3
boldface end = Escape M
10 cpi = Escape E Control-A Control-B
12 cpi = Escape E Control-A Control-@
15 cpi = Escape E Control-@ Control-H
6 lpi = Escape L Control-@ Control-H
8 lpi = Escape L Control-@ Control-F
subscript begin = Escape U
subscript end = Escape D
superscript begin = Escape D
superscript end = Escape U

As you can see, you need Control-@ characters for some of these printer options. AppleWorks 2.0 (but not other versions) contains a bug that prevents you from entering such characters. Use the AppleWorks 2.0 patch described in the April 1987 issue ("Fixing Control-@," p. 2) or ask your dealer for it. ■

Annuities

Continued from p. 1

to deposit and the template calculates the size of your payout. In next month's column, our template will cover the second strategy. Both templates use the powerful "what if" capability of the AppleWorks spreadsheet: You can experiment with a variety of interest rates, times, and amounts for all three phases of your annuity.

► Getting Started

Create a new spreadsheet file from scratch and call it Annuity.AHP. A blank spreadsheet containing rows and columns appears. Position the cursor on cell B3. Type Annuity—AHP and press Return. Now skip one row and go to cell B5. Type the titles you see in **Figure 1** in cells B5–B35.

Now put your cursor on cell E7. Type " = and press Return. With the cursor still on cell E7, center this label: Press Open apple-L (OA-L), E (entry), L (label format), C (center).

Now copy the label down column D to cell E35: Press OA-C, Return (staying within the worksheet), Return again to indicate the source of the material you want to copy. Move the cursor down one cell and type a period to indicate the start of the destination range. Move the cursor down again until it rests on cell E35. Press Return—voilà!

Blank out the extra labels in cells E12, E14, E15, E16, and so on: Press OA-B and Return. Your screen should look like **Figure 1**.

► Entering Formulas

The formulas this template uses are quite complex; be careful to type them into the proper cells. Place your cursor on the cells listed in the accompanying **Table** and enter the formulas indicated. Don't worry about the error messages in cells F13, F17, F23, and F35. Once you've entered data, they'll disappear.

Figure 1. *Entering labels for an annuity spreadsheet.*

```
Annuity - AHP

ACCUMULATION PHASE
------------------
Amount of Regular Deposits      =
Nominal Interest Rate, %        =
Number of Deposits Per Year     =
Number of Years                 =
Number of Months                =

Future Value (calc)             =

HOLDING PHASE
-------------
Initial Investment (calc)       =
Nominal Interest Rate, %        =
Compounding Periods/Year        =
Number of Years                 =
Number of Months                =

Future Value (calc)             =

PAYOUT PHASE
------------
Initial Investment (calc)       =
Nominal Interest Rate, %        =
Number of Payments/Year         =
Number of Years                 =
Number of Months                =

Decimal Years (calc)            =

Amt of Each Payment (calc)      =
```

Cell	Formula
F13	+F7*((1+((F8/F9/100))^(F9*(12*F10+F11/12)))−1)/(F8/F9/100)
F17	+F13
F23	((1+(F18/F19/100))^(F19*((12*F20+F21)/12)))*F17
F27	+F23
F33	(12*F30+F31)/12
F35	+F27*((F28/F29/100)/((1+(F28/F29/100))^(F29*F33)−1)+(F28/F29/100))

► Formatting Cells

The values you enter into the template and the results it calculates have two different formats. Number of Years and Months, Number of Deposits, Compounding Periods, and Payments per Year will be integers with zero decimal places. Amount of the Regular Deposit, Annual Interest Rate, Future Values, Investments, Decimal Years, and Amount of Each Payment will be an integers with two decimal places.

To set these different value formats press OA-V, V, F, 2, Return. Now place the cursor on cell F9. Press OA-L, E, V, F, Return. Repeat this sequence for cells F9, F10, F11, F19, F20, F21, 29, F30, and F31.

► Entering Data

One day you look into the mirror and face reality. Time is passing by and you have to plan for the future: The guys down at your local bar got you into this mood by calling you "Gramps" the other day. Hoolihan, the bartender, says his boy Rocky is making it big investing in annuities—and so is Big Willy.

You figure you can spare $50 a month by staying away from the ponies one weekend out of four. You've got another 10½ years of work left in you, and your wife can work an additional six years and four months beyond that, so you won't need the money until she retires. By that time you should last another 12 years and three months. Madame Schmazoola predicts interest rates will stay at 5 percent for a while, then climb to 8¼ percent, compounded quarterly, and peak at 14½ percent. So how much money a week can you expect this annuity thing to pay, anyhow?

Figure 2. *Entering financial data and calculating results.*

```
Annuity - AHP

ACCUMULATION PHASE
------------------
Amount of Regular Deposits      =        50.00
Nominal Interest Rate, %        =         5.00
Number of Deposits Per Year     =           12
Number of Years                 =           10
Number of Months                =            6

Future Value (calc)             =      8263.39

HOLDING PHASE
-------------
Initial Investment (calc)       =      8263.39
Nominal Interest Rate, %        =         8.25
Compounding Periods/Year        =            4
Number of Years                 =            8
Number of Months                =            4

Future Value (calc)             =     16319.18

PAYOUT PHASE
------------
Initial Investment (calc)       =     16319.18
Nominal Interest Rate, %        =        14.50
Number of Payments/Year         =           52
Number of Years                 =           12
Number of Months                =            3

Decimal Years (calc)            =        12.25

Amt of Each Payment (calc)      =        54.81
```

To answer your question, let's use the template you just created. Place the cursor on cell F7; enter 50. In cell F8 type 5; in cell F9, 12; in cell F10, 10; in cell F11, 6. That takes care of the accumulation phase.

For the holding phase, enter 8.25 in cell F18; 4 in cell F19; 8 in cell F20; and 4 in cell F21. Finally, for payout, enter 14.5 in cell F28; 52 in cell F29; 12 in cell F30; and 3 in cell F31. Your Apple tells you immediately that you'll receive $54.81 a week. Not bad! Your screen should now look like **Figure 2**.

► Playing "What If"

One of the more powerful features of an electronic spreadsheet is its ability to recalculate immediately as you change the value of a parameter, letting you compare results quickly and easily.

In our example, let's assume we want to compare the results of different annuities. Place your cursor on cell F7. Press OA-C and Return to keep the copy within the worksheet. At the prompt to indicate the source, move the cursor down to cell F35 and press Return.

Figure 3. *Comparing alternative annuity strategies.*

```
ANNUITY - AHP

ACCUMULATION PHASE
------------------
Amount of Regular Deposits  =          50.00     70.00
Nominal Interest Rate       =             5         5
Number of Deposits Per Year =            12        12
Number of Years             =            10        10
Number of Months            =             6         6

Future Value (calc)         =       8263.39  11568.75

HOLDING PHASE
-------------
Initial Investment (calc)   =       8263.39  11568.75
Nominal Interest Rate       =             8         8
Compounding Periods/Year    =             4         4
Number of Years             =             8         5
Number of Months            =             4         0

Future Value (calc)         =      16319.18  17402.45

PAYOUT PHASE
------------
Initial Investment (calc)       =  16319.18  17402.45
Nominal Interest Rate           =        14        19
Number of Payments/Year         =        52        52
Number of Years                 =        12        12
Number of Months                =         3         3

Decimal Years (calc )           =        12        12

Amount of Each Payment (calc)   =     54.81     69.38
```

The prompt now asks the destination of the source material. Place the cursor on cells G7, H7, and so on and press Return. The prompt then goes through each term in the formulas in cells F13–F35 and asks NO CHANGE or RELATIVE. Answer RELATIVE for each term. The screen now shows the data in column F repeated in columns G, H, and so on. To evaluate other alternatives, just change the data shown.

Your wife says she'll throw in another $20 a month, but you'd better not count on her working an additional eight years. Five max—her knees are giving out! Big Willy advises you that Madame Schmazoola's crystal ball is cracked: Interest rates will hit 18.6 percent if they move at all.

To evaluate this new information, place your cursor on cell G7 and change 50 to 70. Cell G20 becomes 5, cell G21 becomes zero, and cell G28 becomes 18.6. You may wind up with $69.38 a week—even more if you can convince your wife to keep working! (See **Figure 3**.)

Save this template on a data disk and recall it whenever you're considering investing in annuities: You can predict the results before you make a costly financial commitment. ■

Focus on Function

Using Iteration in Your Spreadsheet

by Scott Hendershot

Complex spreadsheets use up large amounts of memory very quickly, and this spells big headaches for many users. Spreadsheet solutions to some everyday concerns, such as putting together a home-budget plan, can prove troublesome, because you must often create a substantial number of memory-eating cells to handle even simple tasks. A technique called *iteration*, however, can help you conserve space in your spreadsheet and make AppleWorks work more efficiently for you.

Iteration saves space and memory by teaming up calculations in the same cell. Although you'll use a particular cell to calculate the same thing the same way, you can make it act on changing sets of variables—so that you're really using the same cell for a variety of different computations. The sample spreadsheet presented here will give you experience in applying this model. Once mastered, you can use the technique to build any number of spreadsheets of your own design.

►Streamlining Your Home Budget

A typical home-budget spreadsheet contains a list of figures you need to separate into categories and subtotal. The first approach toward setting up such a spreadsheet might be to assign a column for each category and spread the figures across the page.

Figure 1. *Spreadsheet showing iteration formulae.*

```
1        <--enter budget code number here


Checks                                                    +A7
Description                                  Amount      Code

Grocery Store      10                             1        @IF(D13=E10,C13,0
Mr. Hendershot     200                            3        @IF(D14=E10,C14,0
Dr. Johnson        42                             4        @IF(D15=E10,C15,0
Big and Tall Store11                              2        @IF(D16=E10,C16,0
National Fuel      67                             7        @IF(D17=E10,C17,0
Gotcha Covered Ins107                             9        @IF(D18=E10,C18,0
City Water         19                             8        @IF(D19=E10,C19,0
Grocery Store      33                             1        @IF(D20=E10,C20,0
Bank (Car Loan)    500                            5        @IF(D21=E10,C21,0
Dr. Johnson        71                             4        @IF(D22=E10,C22,0
Tom's Garage       232                            5        @IF(D23=E10,C23,0
Dentist            98                             4        @IF(D24=E10,C24,0
City Electric      67.29                          6        @IF(D25=E10,C25,0
Shoe Store         33.69                          2        @IF(D26=E10,C26,0
Clothing Store     39.07                          2        @IF(D27=E10,C27,0
Parts Store        45.73                          5        @IF(D28=E10,C28,0
                                                           @IF(D29=E10,C29,0
                                                           @IF(D30=E10,C30,0
                                                           @IF(D31=E10,C31,0
                                                           @IF(D32=E10,C32,0
                                                           @IF(D33=E10,C33,0
                                                           ----------------
                                                           @SUM(E13...E33)

Budget

1        <--- Enter a 0 to clear, a 1 to calculate

          Category                                Amount

1              Food@IF(A39<>0,@IF(A43=A7,E35,C43),0)
2          Clothing@IF(A39<>0,@IF(A44=A7,E35,C44),0)
3              Rent@IF(A39<>0,@IF(A45=A7,E35,C45),0)
4           Medical@IF(A39<>0,@IF(A46=A7,E35,C46),0)
5               Car@IF(A39<>0,@IF(A47=A7,E35,C47),0)
6          Electric@IF(A39<>0,@IF(A48=A7,E35,C48),0)
7              Fuel@IF(A39<>0,@IF(A49=A7,E35,C49),0)
8             Water@IF(A39<>0,@IF(A50=A7,E35,C50),0)
9         Insurance@IF(A39<>0,@IF(A51=A7,E35,C51),0)

          Total     @SUM(C43...C51)
```

Favorites

▶It's Alphabetical

It's either a bug or a feature: AppleWorks alphabetizes its list of files on your disk. It's not a big problem, but it means that the file you cleverly called Read Me First will appear long after the one called Apple Letters. If you want the names of your files to appear in a particular order, try using filenames such as A Read Me First, B Don't Read Me, and C Save This for Last.■

—Paul Statt, Contributing Editor

While this is easy to do, it wastes valuable memory. If the number of categories is substantial, the number of cells required to do the necessary calculations will be enormous. This large spreadsheet will be cumbersome both on screen and on the printer.

The sample spreadsheet in **Figure 1** contains nine categories and room to list 30 checks. If you use one column per category you'll need nine columns and 270 cells. Let's say your own home-budget sheet contains 18 categories and provides room for 100 checks per month. You'll need 18 columns and 1800 cells to do the work. You can see how quickly the total number of cells progresses even for relatively simply budgeting tasks.

Let's look again, however, at **Figure 1**. If you use one column of cells to select and subtotal all of the amounts with the same code, then change that code and recalculate, you need only about 100 cells to perform the task. Iteration not only cuts down on the size of a spreadsheet, but also represents good programming style and produces a more elegant result.

To set up the iteration format, copy the information and formulas in **Figure 2**. Begin with cell A7 and type 1. (The number in cell A7 will change, depending on which budget code you're calculating.) Type "Checks" in cell A10 and "Descriptions" in cell A11. Skip one line and type the check descriptions (Grocery store, Mr. Hendershot. . . .) in cells A13–A28. Type "Amount" in cell C11 and the corresponding check amounts in cells C13–C28. Type "Code" in cell D11, then skip a line and type the acutual budget codes in cells D13–D28. Type the formulas in

cells E13–E33 and the total formula in E35. Don't forget to type +A7 in cell E10.

The top part of your spread sheet should look like **Figure 1**. You're now ready to continue adding information in the lower half of the spreadsheet.

Type "Budget" in cell A37. Enter 1 in A39. (This will be either a 1 or a zero, depending on whether you want to calculate or clear your spreadsheet).

In cell B41 type "Category" and type category numbers 1–9 in cells A43–A51. Then in B43–B51 type the corresponding category names, such as Food, Clothing, and so on. In cell B53 type "Total," and in cell C41, "Amount." In cells C43–C51 type the formulas shown in **Figure 1**. In cell C53 type the total formula. Your spreadsheet should now look like **Figure 1**.

As you enter information, make sure you're in "zoom" mode, which lets you see all the formulas. Press Open apple-Z (OA-Z) to leave zoom mode, just as you did to enter it. Your spreadsheet should now look like **Figure 2**. After copying all information as it appears, you're ready to use iteration.

Figure 2. *Spreadsheet showing use of iteration on first budget category.*

```
        1<--enter budget code number here

Checks                                                          1
Description                          Amount      Code

Grocery Store                            10         1          10
Mr. Hendershot                          200         3           0
Dr. Johnson                              42         4           0
Big and Tall Store                       11         2           0
National Fuel                            67         7           0
Gotcha Covered Ins                      107         9           0
City Water                               19         8           0
Grocery Store                            33         1          33
Bank (Car Loan)                         500         5           0
Dr. Johnson                              71         4           0
Tom's Garage                            232         5           0
Dentist                                  98         4           0
City Electric                         67.29         6           0
Shoe Store                            33.69         2           0
Clothing Store                        39.07         2           0
Parts Store                           45.73         5           0
                                                                  0
                                                                  0
                                                                  0
                                                                  0
                                                                  0
                                                                ----
                                                                 43

Budget

        1<--- Enter a 0 to clear, a 1 to calculate

          Category                          Amount

        1     Food                              43
        2 Clothing                               0
        3     Rent                               0
        4  Medical                               0
        5      Car                               0
        6 Electric                               0
        7     Fuel                               0
        8    Water                               0
        9Insurance                               0

         Total                                  43
```

►Codes to Save Space

The iteration process consists of only three parts: setting the code number to be totaled, calculating, and starting over. In our example, A38 is the on/off cell. Place a zero in this cell to reset the spreadsheet and clear the totals. A6 is the count cell, which keeps track of the iteration you're calculating.

You might also consider the iteration count as the number of the code the spreadsheet's calculating currently. Cells E12–E32 do the "spreading." Place a 1 in cell A38 to recalculate the spreadsheet once for each category (nine in our example) you want to total.

To achieve each calculation, enter the proper category number in cell A6. The cells in column E check to see whether the code in that row matches the iteration count.

If so, the spreadsheet copies the amount in column C into column E. If not, the cell contains a zero. E34 sums up the total for each iteration.

The next step is to place the appropriate total next to each category in the budget section. Cells C42–C50 check to see whether the iteration count equals the category code in column A. If so, the spreadsheet copies the value from E34. If not, the cells retain their current values.

That's all there is to it. Set the code number to be calculated, calculate, and repeat. Iteration will help you conserve memory while you create first-class spreadsheets. ■

New Products

Back to School and Other Jokes

by Paul Statt

September's approaching. If you're a teacher and you use AppleWorks, take at look at **ZipFiles for Educators** ($24.95), a set of AppleWorks spreadsheet templates especially created for teachers by Petit Design, of Milwaukee, Wisconsin. (See *Main Menu*'s review of the original ZipFiles software, this page.)

The package consists of two modules, ZipGrader and Gradebook. ZipGrader is the more sophisticated program, offering a plot of student averages, independent grade weighting, and independent weighting of different types of grades—quizzes, exams, homework.

ZipGrader also lets you use directly any data you've collected with the simpler Gradebook program. Both are AppleWorks spreadsheet files, so moving information isn't a problem.

The ZipFiles for Educators disk even includes an AppleWorks spreadsheet file that can draw a simulated bar chart of the grade records you keep, or of any other spreadsheet data.

Many educators find that AppleWorks works great in the classroom—and not only for managing it. Tom Snyder's **GeoWorld**, reviewed in July's *Main Menu* (p. 11), creates a living database file of information about the world's geology.

The Power of Nation States ($95 site license, Data Disk International, 1430 Willamette, Suite 577, Eugene, OR 97401) is almost as ambitious a project: It's an examination of what makes a nation great, and it employs the AppleWorks database to assist you in making decisions.

The Power of Nation States isn't just one database file—it's many. Basing their assessment of the world geopolitical situation on the respected works of Hans Morgenthau and John Rourke—*Politics Among Nations* and *Internatioinal Politics on the World Stage*, respectively—the authors, all working educators, have amassed an impressive array of details about the state of the world.

The Power of Nation States collects information in 28 categories from 167 nations of the world. Categories range from "population per square mile" to "number of nuclear weapons," and can clearly demonstrate to students in geography, social-studies, or history classes the meaning of such worn phrases as "The Third World" or "The Nuclear Club."

The Power of Nation States includes word-processor files for student and teacher textbooks, but the program encourages teachers to "write their own books." Using the power of AppleWorks and an outline of the prepared text makes what might have been a daunting assignment manageable. The authors suggest six computer lessons covering the basics of what power means to a nation state. It's especially interesting to see the results of the program's computations of the power held by the Communist and Western blocs today.

Teachers can also create tests easily from the material in the lessons, writing the exams in the AppleWorks word processor with information borrowed from the database.

If writing tests and keeping grades isn't your problem, but keeping the kids entertained is, try **ComedyWorks** ($14.95) from Petit Design. ComedyWorks is an AppleWorks database file of jokes, humorous anecdotes, and other witty words for anyone who has to speak in public—or just wants to impress friends.

Imagine being able to look up all the jokes you know about presidential primaries, or any other subject, with the speed of the AppleWorks database. And, because it's an open file, you can add jokes that got a laugh or those that bombed for you.

ComedyWorks even prints out 3-by-5-inch index cards—ideal for speakers and teachers who read from notes. (Can you interface an Apple II to a teleprompter?)■

Reviews

Intelligent Spreadsheet Templates

by Paul Statt

The spreadsheet is the bright child of the AppleWorks family: It's the only chance AppleWorks gets to show off the power of the computer to calculate and make logical decisions.

But most users never put the AppleWorks spreadsheet to the test—we never attempt to program a spreadsheet file. If you're curious to know just what that means, **ZipFiles Desktop Accessories**—spreadsheet templates that mimic calendars and calculators and make envelope and label printing easier—will show you. A nifty concept can't guarantee a neat product, though, and ZipFiles, sad to say, will never replace Pinpoint.

►Keeping Track of Appointments

The good news is ZipFiles' calendar functions. The ZipFiles disk contains two calendar files, both intelligently thought out and carefully programmed. It's no easy task to write a program that draws a calendar, especially when your programming language—AppleWorks in this case—has only one if/then construction.

The ZipFiles calendar templates are easy to use, and even offer a "tickler" function that will remind you of appointments (if you happen to glance at the calendar—it can't beep). Dates of appointments or deadlines are marked with an asterisk; you simply place the cursor on the asterisk and a message appears at the bottom of the screen.

Actually all the ZipFiles templates are easy enough to use; it's just hard to learn how. ZipFiles' page layout forces you to use open apple-arrow key combinations to jump from page to page. Each file includes a "speedmap" (see **Figure 1**) to make finding your way around a large spreadsheet easier, but I for one am not in the habit of leaping from page to page this way.

When I used Open apple-F to find July on the calendar, for instance, rather than page through a 20K spreadsheet, AppleWorks found the July page quickly enough. But because I didn't use open apple-arrow keys, the calendar wasn't in the center of the page. It's not an impossible interface once you get accustomed to it, but it's like nothing you've used before.

Figure 2. *ZipFiles' basic calculator.*

```
File: Calculator              REVIEW/ADD/CHANGE              Escape: Main Menu
==   ===A========B========C==========D==========E========F========G====
  1|
  2|                          -=( CALCULATOR )=-
  3|                    ____________________
  4|                   |  ________________  |
  5|                   | |                | |
  6|                   | |          994.75| |
  7|                   | |________________| |
  8|                   |                    |
  9|                   |    7  8  9  x      |
 10|                   |                    |
 11|                   |    4  5  6  /      |
 12|                   |                    |
 13|                   |    1  2  3  -      |
 14|                   |                    |
 15|                   |    0  .  =  +      |
 16|                   |____________________|
 17|
 18|        DIRECTIONS: Use cell D6 to do calculations.
-------------------------------------------------------------------------------
D6: (Value, Layout-A0) 23*43.25

Type entry or use @ commands                                  @-? for Help
```

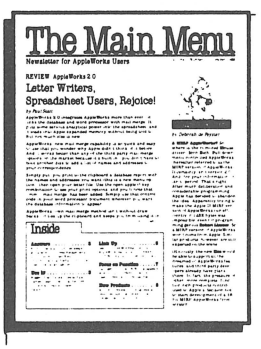
►Calculators: Not So Unique

My reaction to the calculators, on the other hand, was "I could do that myself." The file called "Calculator" (see **Figure 2**) presents you with an ingenious graphics representation of a calculator, then offers the lame instruction, "Use cell D6 to do all calcula-

Figure 1. *A ZipFiles' "speedmap."*

```
File: Flash Pad               REVIEW/ADD/CHANGE              Escape: Main Menu
====A=B======C=======D=E==F=G=H=I=J=K=L=M=N=O=P=Q=R=S=T=U=V==W====X=    ===Y===
  1|
  2|                  ____________________ ____________________ ____________________
  3| You are Here->|   SpeedMap   |   Support Calcs  |     Note Pad     |
  4|                |______________|__________________|                  |
  5|                |              |                  |                  |
  6|                |   Calendar   |     Tickler      |                  |
  7|                |______________|      Area        |                  |
  8|  ____________________        :__________________:                  |
  9| |                    |\      |                  |                  |
 10| |  -=( Calculator )=   ||    |   KwikEnvelope   |                  |
 11| |  ____________        ||    |__________________|__________________|
 12| | |   114266.34|       ||    |                                     |
 13| |  ~~~~~~~~~~~~        ||    |   Phone List and Address List       |
 14| | Scientific Notation: ||    |_____ _______________________________|
 15| |                     3||    |     /                               |
 16| |     114.26634 x 10   ||    |    Task List     /  Notes/Comments   |
 17| |____________________||    |_____________/_____/_________________|
 18|  ~~~~~~~~~~~~~~~~~~~~~~~~~~
-------------------------------------------------------------------------------
A1: (Label, Protect-N)

Type entry or use @ commands                                  @-? for Help
```



The Main Menu
Newsletter for AppleWorks Users
REVIEW AppleWorks 2.0
Letter Writers, Spreadsheet Users, Rejoice!
Inside

Last on the routing slip?

Get The Main Menu firsthand!

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☐ Payment Enclosed ☐ Bill me

Name

Address

City, State, Zip

Send to:
The Main Menu
P.O. Box 802, Peterborough, NH 03458 MMA86C

tions.'' In other words, the calculator is an empty spreadsheet file. You type expressions into cell D6, and AppleWorks evaluates the expression, just as it would in any spreadsheet cell. There isn't a formula in the file.

It's lucky that a couple of specialized calculators round out the ZipFiles collection. Its factorial, trigonometric, and scientific calculators do add some formulas to the blank AppleWorks spreadsheet, to perform functions such as SIN(x), /x, and x!.

All in all, though, if you really need any of these calculators, you could write the template yourself. In fact, you could probably come up with a template that would meet your own personal needs better.

►Other Enhancements

A couple of extras round out ZipFiles Desktop Accessories: a label and envelope printer that centers and spaces addresses and other information properly, and a disk cataloger that prints ProDOS directories. The catalog is simple, but its advantage is its size: It's just right to fit onto a disk envelope for a permanent record.

The address list is as basic as it sounds, but it does merge with ZipFiles' envelope labeler. Maybe not every AppleWorks user can program his or her own personal calculator that figures the numbers he or she needs to know most often, but every AppleWorks owner ought to be able to create a list of names in a spreadsheet file.

All the ZipFiles templates benefit from the speed of an accelerator card or the Apple IIGS. You could also pick up ZipFiles' pace by deleting the parts of the spreadsheet you don't use—or writing your own calculator or calendar.

ZipFiles comes from Petit Design, a one-man company. Pete Petit's ideas are timely and important: that software should be smart, that the spreadsheet in particular is actually a ''higher-level programming language.'' For example, he's written an AppleWorks spreadsheet template that works like an ''expert system'' medical database for diagnosing illness at home. That's an unusual, innovative, helpful use of the AppleWorks spreadsheet. His desktop accessories are also unusual, and the calendars innovative.

All in all, ZipFiles convinced me that I've been operating AppleWorks at half power—but didn't convince me to spend $24.95.■

Favorites

►Sticky Spaces

If you're doing much type processing with AppleWorks, whether it's as simple as typing a newsletter or as complex as electronic typesetting, you should be using the AppleWorks ''sticky space'' to avoid ''widows.'' A widow is a leftover word at the end of a paragraph of text, on the last line all by its lonesome. Imagine writing ''Apple II'' and finding ''Apple'' on one line and ''II'' by itself on the next, like this:

. . . . Apple
II.

The AppleWorks sticky space avoids the problem by treating the whole phrase ''Apple II'' as a single word. Press Open apple-Spacebar to insert a sticky space; you'll see it as a caret: ''Apple^2.''■

►Hidden Commands

Did you know that most ASCII control characters work with AppleWorks? Try Control-K: It moves the cursor up one line; Control-J moves it down. Control-H is a backspace. The most famous ASCII control character is Control-Y, which deletes to the end of the line; Control-M works like the Return key.■

—Paul Statt, Contributing Editor

Product Information

ZipFiles
Petit Design
2650 South Shore Drive
Milwaukee, WI 53207
(414) 483-9056
$24.95
Rating:

The Main Menu reviews range from poor to excellent denoted by one to five red apples. If a product receives one red apple, it means the reviewer wouldn't spend his money to buy it and neither should you. If it receives five red apples, it means that our usually tight-fisted reviewer would part with his money to buy it because of the value it offers in increased productivity and performance.

excellent
good
satisfactory
fair
poor